

WHAT IS CLAIMED IS:

1. A textile construction (1), comprising:
  - a conductive elastomeric material (20) suitable for converting an interaction therewith into a signal; and
  - 5 an actuator (30) cooperative with said conductive elastomeric material (20) to provide an intuitive user interface (10).
2. The textile construction (1) of claim 1, wherein one or more characteristics of said conductive elastomeric material (20) change in response to said interaction.
- 10 3. The textile construction (1) of claim 1, wherein said conductive elastomeric material (20) has piezoelectric characteristics.
4. The textile construction (1) of claim 1, wherein said conductive elastomeric material (20) is a polypyrrole/lycra, a polypyrrole/nylon, a polypyrrole/polyester, or any other conjugated polymer, or ion-implanted polymer,  
15 or any combination of the same.
5. The textile construction (1) of claim 1, wherein said conductive elastomeric material (20) can have one or more of the following: a flexible metal coated fabric including woven, non-woven, and/or knit, filaments, foils, and yarns, a conductive polymer coated fiber/fabric, a conductive graphitized fiber/fabric, or a  
20 conductive gel coated fiber/fabric, and/or any combination of the same.

6. The textile construction (1) of claim 1, wherein said actuator (30) is formed from a relatively rigid material.

7. The textile construction (1) of claim 1, wherein said actuator (30) is formed from plastic or rubber or some combination thereof.

5 8. The textile construction (1) of claim 1, wherein said actuator (30) is cooperative with said conductive elastomeric material (20).

9. The textile construction (1) of claim 1, wherein one or more characteristics of said conductive elastomeric material (20) change in proportional response to said interaction, said interaction causing one or more areas (25) of said  
10 conductive elastomeric material (20) to be displaced.

10. A multi-direction proportional input device, comprising:

a conductive elastomeric textile construction (1) having an intuitive user interface (10),

wherein said intuitive user interface (10) has an actuator (30) cooperative  
15 with one or more conductive areas (25).

11. The multi-direction proportional input device of claim 10, wherein one or more characteristics of said one or more conductive areas (25) change in response to an interaction via said actuator (30).

12. The multi-direction proportional input device of claim 10, wherein  
20 said interface (10) is connected to a textile surface (5).

13. The multi-direction proportional input device of claim 10, wherein said interface (10) is integral with a textile surface (5).

14. The multi-direction proportional input device of claim 11, wherein any relative movement of said one or more conductive areas (25) is detectable via  
5 said change in the characteristics thereof.

15. The multi-direction proportional input device of claim 14, wherein a displacement ratio between said one or more conductive areas (25) is used to quantify the degree of said interaction and/or to quantify the speed or rate of said interaction.

10 16. A garment having the input device of claim 15.

17. A garment having the input device of claim 10, said input device being suitable for use in a variety of different wearable electronic applications and/or for accomplishing one or more different complex functionalities requiring proportional input.

15 18. A method for forming a multi-direction input device, comprising the steps of:

fashioning an interface (10) from a conductive elastomeric textile, said interface (10) having an actuator (30) for cooperating with one or more conductive areas (25) of said interface (10).

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19. The method of claim 18, further comprising the step of connecting said interface (10) with a garment or upholstery cooperative with one or more electronic devices and/or systems.

20. The method of claim 18, wherein said interface (10) is integral to a  
5 garment or upholstery suitable for cooperating with one or more electronic devices and/or systems.